



NATIONAL PETROCHEMICAL COMPANY
STANDARDS

ENGINEERING STANDARD
FOR
HAZARDOUS AREA CLASSIFICATION

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1

SCOPE

This standard describes the general guidance for classification of areas in petrochemical plants.

2

STANDARDS AND CODES

Following Recommendations of API shall be applied for hazardous area classification.

- API RP 500 A Classification of Areas for Electrical Installations in Petroleum Refineries.
- IP Model Code of Safe Practice Part 1.

3

GENERAL

The following guidance is given for area classification in accordance with American Petroleum Institute and Institute of Petroleum Model Code of Safe Practice Part 1, in order that specify which items of plant or operations should normally be considered a source of hazard and which should not. The practical application of the following guidelines, in conjunction with the IP Code, will generally result in the whole of the process area of a petrochemical plant being classified as Division 2 with a number of Division 1 areas enclosed within. If exact boundary lines are drawn from sources of hazard to the minimum distances permitted by the code, it is sometimes theoretically possible to provide small packets of Safe Area inside a general process area.

This interpretation will not normally be accepted and in general terms Safe Area will lie on the outside of process areas unless otherwise agreed.

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4 HAZARDOUS ATMOSPHERE

The first step in area classification is to consider the flammable materials processed or stored in a given installation, and decide which of these are likely to give rise to hazardous atmospheres and become a source of hazard.

It can be expected that the following materials on release to the atmosphere are likely to give flammable mixtures with air.

- 4.1 Any liquefied flammable gas.
- 4.2 Any flammable gas.
- 4.3 Any flammable liquid processed or stored above its normal boiling point.
- 4.4 Any flammable liquid with a flash point of less than 32°C (90°F) even if processed or stored below its flash point.
- 4.5 Any flammable liquid processed or stored above its flash point (heated storage).

5 SOURCES OF HAZARD

Having identified materials likely to give rise to hazardous atmospheres, it is necessary to consider the location of likely release which is to be defined as a "source of hazard". The recommendations made below for defined sources should be supplemented at the design stage by an assessment of any special circumstances which might move one of the items listed into a higher classification, e.g. unusually high corrosion rates.

5.1 SAFE AREAS

Safe areas have not been covered in detail since these are adequately covered by the IP Code. They may be taken generally to consist of any area *not* otherwise classified.

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